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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,364	11/26/2003	Brian B. Lee	P0004962.00	9986
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MEDTRONIC, INC. 710 MEDTRONIC PARKWAY NE MINNEAPOLIS, MN 55432-9924			EXAMINER RAJAN, KAI	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,364	Applicant(s) LEE ET AL.	
	Examiner Kai Rajan	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on August 15, 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 32 is/are pending in the application.
- 4a) Of the above claim(s) 31, 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner acknowledges the response filed August 15, 2008, from which claims 1 – 32 are pending, claims 31 and 32 withdrawn from consideration.

Election/Restrictions

Claims 31 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 15, 2008.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 29, 2008 has been entered.

Specification

The disclosure is objected to because of the following informalities: It is the Examiner's position that Applicant has invoked sixth paragraph, means-plus-function language to define Applicant's invention. Therefore the Examiner requires the Applicant to amend the specification pursuant to 37 CFR 1.75(d) and MPEP 608.01(o) to explicitly state, with reference to the terms

and phrases of the claim element, what structure, materials, and acts perform the function recited in the claim element. Please note that the MPEP clearly states, “Even if the disclosure implicitly sets forth the structure, materials, or acts corresponding to the means-(or step-) plus-function claim element in compliance with 35 U.S.C. 112, first and second paragraphs, the PTO may still require the applicant to amend the specification pursuant to 37 CFR 1.75(d) and MPEP 608.01(o)...”. (Also see **MPEP 2181** (Rev. 1, Feb.2000))

Appropriate correction is required.

Claim Objections

Claims 19 – 21 and 24 are objected to because of the following informalities: It is the Examiner’s position that Applicant has invoked sixth paragraph, means-plus-function language to define Applicant’s invention. Therefore the Examiner has objected to the claims for the reasons set forth above in the objection to the specification.

Appropriate correction is required.

Note to Applicant: In addition to the claim objection set forth above, if the elements of the specification performing the acts claimed in the means plus function claim limitations are software components, and contain no material structure, then those claim limitations fail to further limit the apparatus claims of 19 – 24 since they impart no additional structure.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett et al. U.S. Patent No. 5,331,966, herein after Bennett.

1. A method for storing and processing physiological mechanical data in a medical recording device comprising:

sampling one or more physiological signals at a selected sampling rate (Column 18 lines 53 – 68, column 19 lines 1 – 26);

deriving physiological parameter values from the sampled signal to obtain parameterized signal data at a rate lower than the selected sampling rate of the physiological signal (Column 18 lines 53 – 68, column 19 lines 1 – 26);

storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26);

determining a statistical aspect of the stored parameter values in the temporary buffer upon expiration of the storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26. “Every other data point” comprises a statistical aspect.); and

writing the statistical aspect as it is determined for a plurality of the predetermined storage intervals to a long-term memory buffer, the long-term memory buffer storing the

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statistical aspects for a long- term storage interval, the long-term memory buffer thereby storing statistical aspects having a temporal resolution of the parameter values corresponding to the predetermined storage interval of the temporary memory buffer (Column 18 lines 53 – 68, column 19 lines 1 – 26).

2. A method according to claim 1, further comprising:

allocating the temporary memory buffer into at least two different temporary memory buffers and programming a unique storage interval to each of the two different temporary memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

3. A method according to claim 2, further comprising allocating the long-term memory buffer into at least two different long-term memory buffers each having a unique temporal resolution, wherein the unique temporal resolution of each long-term memory buffer is determined by the predetermined storage interval of a respective one of the temporary memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

4. A method according to claim 3, wherein the at least two long-term memory buffers comprise digital memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

5. A method according to claim 1, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an

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intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal (Column 12 lines 63 – 68, column 13 lines 1 – 26).

6. A method according to claim 5, further comprising calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more. physiologic signals or the stored parameters (Column 27 lines 41 – 58).

7. A method according to claim 1, further comprising performing said method based upon at least one of: a manually triggered event, a periodic event, an aperiodic event, a time of day, an automatically triggered event (Column 12 lines 63 – 68, column 13 lines 1 – 26).

8. A method according to claim 7, wherein said manually triggered event comprises a manually-triggered telemetric method-initiation signal (Column 17 lines 26 – 68, column 18 lines 1 – 36).

9. A method according to claim 3, wherein the unique temporal resolution comprises at least a one of: a coarse resolution having a relatively low temporal resolution, a medium resolution having a higher temporal resolution than said course resolution, and a fine resolution having the highest temporal resolution compared to said coarse resolution and said medium resolution (Column 18 lines 53 – 68, column 19 lines 1 – 26).

10. A method according to claim 1, wherein in the event that during performance of the step of writing the statistical aspect to a long-term memory buffer said memory buffer capacity is exceeded, then over-writing a portion of the previously-recorded statistical aspect (Column 18 lines 53 – 68, column 19 lines 1 – 26).

11. A method according to claim 10, wherein the portion comprises the least recent portion of previously-recorded statistical aspect (Column 18 lines 53 – 68, column 19 lines 1 – 26).

12. A method according to claim 9, wherein upon expiration of a predetermined storage interval or upon exceeding available memory storage of a given long-term storage buffer the following, step is performed:

transferring a set of data comprising the statistical aspect or the stored parameter values from one of said fine resolution and said medium resolution to said coarse resolution and from said fine resolution to said medium resolution (Column 18 lines 53 – 68, column 19 lines 1 – 26).

13. A method according to claim 1, further comprising:

storing the parameter values based upon at least one of: a discrete classification of the stored parameters, the temporal resolution of the stored parameters, and the total duration of storage time for said stored parameters (Column 18 lines 53 – 68, column 19 lines 1 – 26).

14. A method according to claim 9, further comprising:

allocating available memory for the stored parameters based at least in part upon a respective temporal resolution assigned to each of the stored parameters, wherein said respective temporal resolution comprise said coarse resolution, said medium resolution, said fine resolution (Column 18 lines 53 – 68, column 19 lines 1 – 26).

15. A method according to claim 14, wherein the allocating further comprises automatic partitioning of available memory based upon the number of stored parameters or the temporal resolution of the stored parameters (Column 18 lines 53 – 68, column 19 lines 1 – 26).

16. A method according to claim 1, wherein the temporary memory buffers comprise histogram memory units and wherein the histogram memory units are assigned a value or range of values of the stored parameters to store (Column 18 lines 53 – 68, column 19 lines 1 – 26. Buffer partitions store different temporal resolutions of data).

17. A method according to claim 16, wherein the histogram memory units are assigned at least one of: a discrete percentile range, a median storage value, an upper percentile value, a lower percentile value, as stored contents of said memory units (Column 18 lines 53 – 68, column 19 lines 1 – 26).

18. A method according to claim 17, further comprising:
transferring the stored contents of some of the histogram memory units to the long-term memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

19. An apparatus for storing and processing physiological data in a medical recording device comprising:

means for sampling one or more mechanical physiological signals at a selected sampling rate (Column 18 lines 53 – 68, column 19 lines 1 – 26);

means for deriving mechanical physiological parameter values from the sampled signal to obtain parameterized signal data at a rate lower than the selected sampling rate of the physiological signal (Column 18 lines 53 – 68, column 19 lines 1 – 26);

means for storing the mechanical physiological parameter values as they are determined in a temporary memory buffer for a predetermined storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26);

means for determining a statistical aspect of the stored parameter values upon expiration of the storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26. “Every other data point” comprises a statistical aspect.); and

means for writing the statistical aspect as it is determined for each of a plurality of the predetermined storage intervals to a long-term memory buffer, the long-term memory buffer storing the statistical aspects for a long-term storage interval, the long-term memory buffer thereby storing statistical aspects having a temporal resolution of the parameter values corresponding to the predetermined storage interval of the temporary memory buffer (Column 18 lines 53 – 68, column 19 lines 1 – 26).

20. An apparatus according to claim 19, further comprising:

means for allocating the temporary memory buffer into at least two different temporary memory buffers and designating a unique storage interval to each of the two different temporary memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

21. An apparatus according to claim 20, further comprising means for allocating the long-term memory buffer into at least two different long-term memory buffers each having a unique temporal resolution, wherein the temporal resolution of each long-term memory buffer is determined by the predetermined storage interval of a respective one of the temporary memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

22. An apparatus according to claim 20, wherein the at least two long-term memory buffers comprise digital memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

23. An apparatus according to claim 19, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal (Column 12 lines 63 – 68, column 13 lines 1 – 26).

24. An apparatus according to claim 23, further comprising:
means for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters (Column 27 lines 41 – 58).

25. A computer readable medium for storing instructions for storing and processing physiological data in a medical recording device having continuous data collection and data storage of such data in multiple time- resolved tiers, comprising:

instructions for sampling one or more physiological signals at a selected sampling rate (Column 18 lines 53 – 68, column 19 lines 1 – 26);

instructions for deriving physiological parameter values from the sampled signal to obtain parameterized signal data at a rate lower than the selected sampling rate of the physiological signal (Column 18 lines 53 – 68, column 19 lines 1 – 26);

instructions for storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26);

instructions for determining a statistical aspect of the stored parameter values upon expiration of the storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26. “Every other data point” comprises a statistical aspect.); and

instructions for writing the statistical aspect as it is determined for each of a plurality of the predetermined storage intervals to a long-term memory buffer, the long-term memory buffer storing the statistical aspects for a long-term storage interval, the long-term memory buffer thereby storing the statistical aspects having a temporal resolution of the parameter values corresponding to the predetermined storage interval of the temporary memory buffer (Column 18 lines 53 – 68, column 19 lines 1 – 26).

26. A medium according to claim 25, wherein the temporary memory buffer comprises at least two temporary memory buffers each having a unique predetermined storage interval (Column 18 lines 53 – 68, column 19 lines 1 – 26).

27. A medium according to claim 26, wherein the long- term memory buffer comprises at least two long-term memory buffers each having a unique temporal resolution corresponding to one of the unique predetermined storage intervals of an associated temporary memory buffer (Column 18 lines 53 – 68, column 19 lines 1 – 26).

28. A medium according to claim 27, wherein the at least two long-term memory buffers comprise digital memory buffers (Column 18 lines 53 – 68, column 19 lines 1 – 26).

29. A medium according to claim 25, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal (Column 12 lines 63 – 68, column 13 lines 1 – 26).

30. A medium according to claim 29, further comprising:
instructions for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters (Column 27 lines 41 – 58).

Response to Arguments

Applicant's arguments with respect to claims 1 – 30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kai Rajan whose telephone number is (571)272-3077. The examiner can normally be reached on Monday - Friday 9:00AM to 4:00PM.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kai Rajan/
Examiner, Art Unit 3736

/Michael C. Astorino/
Primary Examiner, Art Unit 3736

September 24, 2008